

II. REMARKS

A. Status of the claims and Applicants' position on the rejections

Claims 1-19, 30-35, 60-62, 70, 82, and 83 are pending in this application. Claims 1, 4, 19, 30, 60, and 70 have been amended without introducing any new matter. Claim 84 has been added.

All claims were rejected in the Final Office Action, mailed on October 22, 2003, under 35 U.S.C. § 103(a) in view of Boyd and Solomon, further in view of Lyon or Takano. Applicants respectfully traverse the rejections and request reconsideration. As will be explained below, (1) Boyd teaches away from Applicant's claimed invention, (2) the combination of Boyd and Solomon is improper, and (3) no prima facie case of obviousness has been established to support the rejections.

B. The references cited in the Office Action

Boyd discloses a standoff adapter 12 for coupling to a probe 10. The purpose, nature, and construction of the standoff adapter being to provide a standoff (distance) between the imaging end of the adapter 11 and a patient 14. The standoff is accomplished by providing a sufficiently large standoff adapter 12 to allow good near field imaging of the patient. Column 1, lines 28 – 42 suggests that a standoff distance is conventionally about “1 to 4 cm in thickness.” Boyd does not disclose using a holder that prevents the probe from contacting a skin interrogation region without introducing a standoff therebetween, i.e., less than 1 cm between the probe and a window in the holder. (See Fig. 1-4).

Solomon discloses an endoscopic ultrasound probe 10 for trans-esophageal echo cardiographic imaging. The probe includes a compound lens assembly 16 with a cover assembly 18. Motor 42 and gears 28 are used to rotate an ultrasonic array through rotating shaft 53 to produce the desired image angle. (See Figs. 1-3).

Lyon discloses a hand-held ultrasonic probe having a grip for improving the friction and softness of the grip of the probe. Takano discloses a liquid bag enclosure for coupling a probe to

a subject to be examined. Poncy discloses a sheath placed over an ultrasonic probe and secured by bands.

C. Boyd teaches away from Applicants' claims

In contrast to Boyd, and contrary to the teachings therein, Applicants' claims recite a probe holder that is "*positioned and sized to prevent direct contact between the interrogation surface of the probe and the skin, but without introducing a substantial standoff distance between the interrogation surface of the probe and the interrogation window.*" (Amended claim 1). Specifically, Applicants claim that "*the distance between the interrogation surface of the probe and the interrogation window is less than approximately 1 cm.*" Boyd teaches keeping a substantial distance between the probe and the alleged window. Therefore, Boyd's standoff for the explicit purpose of separating the probe from the alleged window is a teaching away from the claimed proximity between the probe and the window, and the rejection in view of Boyd is improper.

D. The combination of Boyd and Solomon is improper

The proposed combination of Boyd and Solomon is improper because the proposed modification of Boyd [Solomon] according to Solomon [Boyd] would change the principle of operation of Boyd [Solomon] and render it useless. The MPEP states that "*If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.*" (MPEP §2143.01).

In the present case, Boyd's purported invention is a standoff for establishing a substantial distance between the probe surface and the alleged window, while Solomon's purported invention is directed to compact probes such as may be placed in a human esophagus. Removing the standoff distance from Boyd's standoff device, or adding a substantial standoff size to Solomon would completely contradict the principle of the two references. Therefore, as quoted from the MPEP above, the Examiner's combination of Boyd and Solomon is improper. Since the combination of Boyd and Solomon was used as the basis for each of the rejections of Applicants' claims in this case, all of these rejections are improper and should be withdrawn.

E. No prima facie case of obviousness exists for the rejections

The basic requirements for a prima facie case of obviousness, as given in the MPEP at §2143, are: (1) a motivation or suggestion to modify or combine the references, (2) a reasonable expectation of success from the combination or modification, and (3) the reference must teach all the claim limitations. In the present case, at least the first two requirements have not been met.

First, no motivation or suggestion to remove the standoff distance in Boyd's standoff device exists in the reference. No motivation or suggestion to introduce a standoff in the probe of Solomon exists in that reference. Second, there can be no reasonable expectation that the combination or modification proposed in the Office Action will succeed, as such a modification would defeat the principles of operation of both references and would render them both inoperative.

Accordingly, no prima facie obviousness case exists to support the 35 U.S.C. §103 rejections made in the Office Action. Applicants therefore respectfully request that the rejections be withdrawn.

III. CONCLUSION

Applicants again thank the Examiner for his search and examination of the claims in this application. However, as Boyd teaches away from Applicants' claimed invention, as the combination of Boyd and Solomon is improper, and as no prima facie case of obviousness exists to support the rejections of the Office Action, Applicants respectfully request that the rejections be withdrawn and the claims be allowed.

An early and favorable consideration of the claims is requested. If the Examiner believes any informalities remain in the application which may be corrected by Examiner's Amendment, or there are any other issues which can be resolved by telephone interview, a telephone call to the undersigned is respectfully solicited.

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No fees are believed to be due in connection with this paper. However, please charge any fees or credit any overpayment that may be due in connection with this paper to Deposit Account No. 08-0219.

Respectfully submitted,

For Applicants, Mendlein et al.

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Ibrahim M. Hallaj
Ibrahim M. Hallaj
Reg. No. 51,768

Hale and Dorr LLP
60 State Street
Boston, MA 02109
Telephone: (617) 526-5053
Facsimile: (617) 526-5000